

Name: _____

Date: _____

Exam: Function Reflections (Practice version 9)

1. Let function f be defined by the polynomial below:

$$f(x) = 6x^4 + 7x^3 - 4x^2 + 8x + 9$$

Draw lines that match each function reflection with its polynomial:

Reflections

Polynomials

$f(-x)$ •

• $-6x^4 - 7x^3 + 4x^2 - 8x - 9$

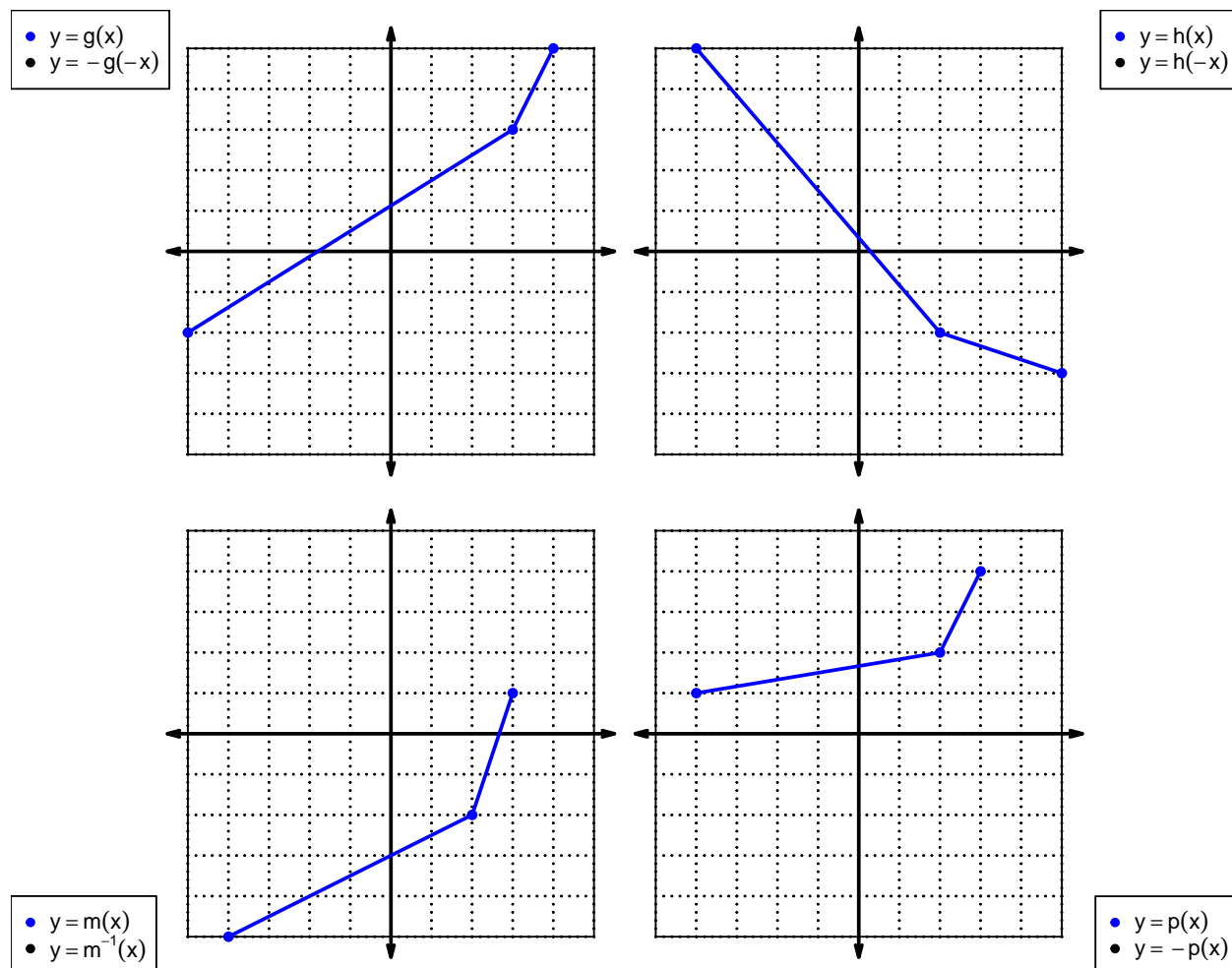
$-f(x)$ •

• $-6x^4 + 7x^3 + 4x^2 + 8x - 9$

$-f(-x)$ •

• $6x^4 - 7x^3 - 4x^2 - 8x + 9$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



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For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	2	4	8
2	8	6	7
3	1	9	3
4	9	7	2
5	7	2	6
6	3	1	4
7	6	8	1
8	4	5	9
9	5	3	5

3. Evaluate $f(6)$.

4. Evaluate $h^{-1}(8)$.

5. By filling more rows of the table, it is possible to make function h **even**. If that were done, what would be the value of $h(-7)$?

6. By filling more rows of the table, it is possible to make function g **odd**. If that were done, what would be the value of $g(-5)$?

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7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = -x^3 + x$$

- a. Express $p(-x)$ as a polynomial in standard form.

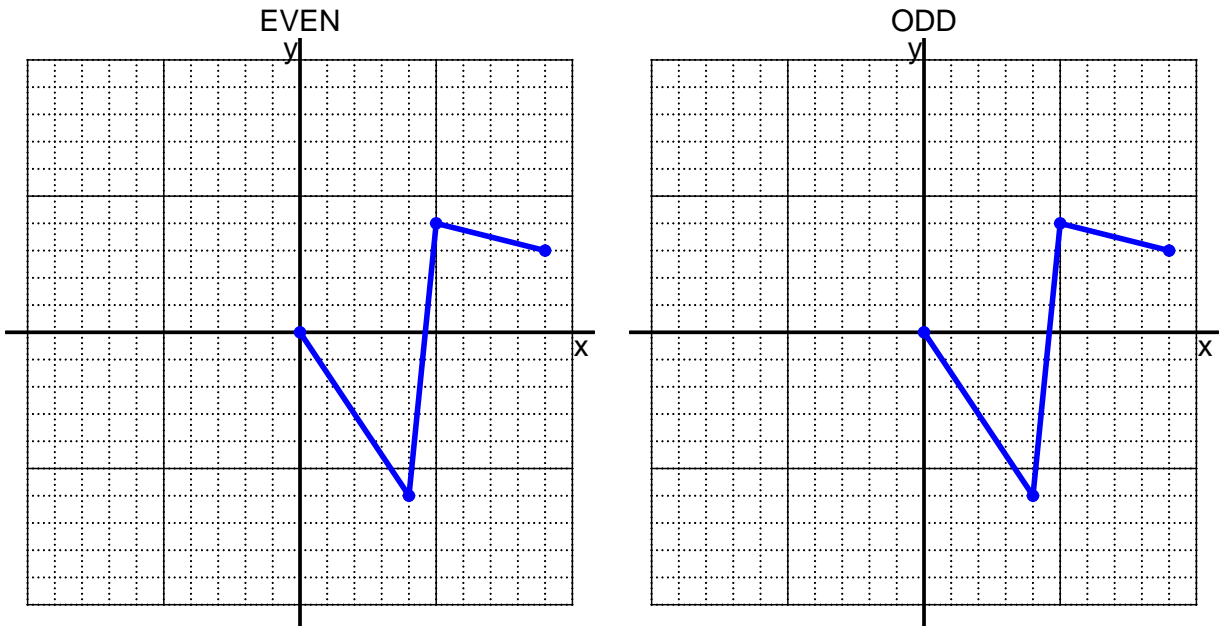
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

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8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

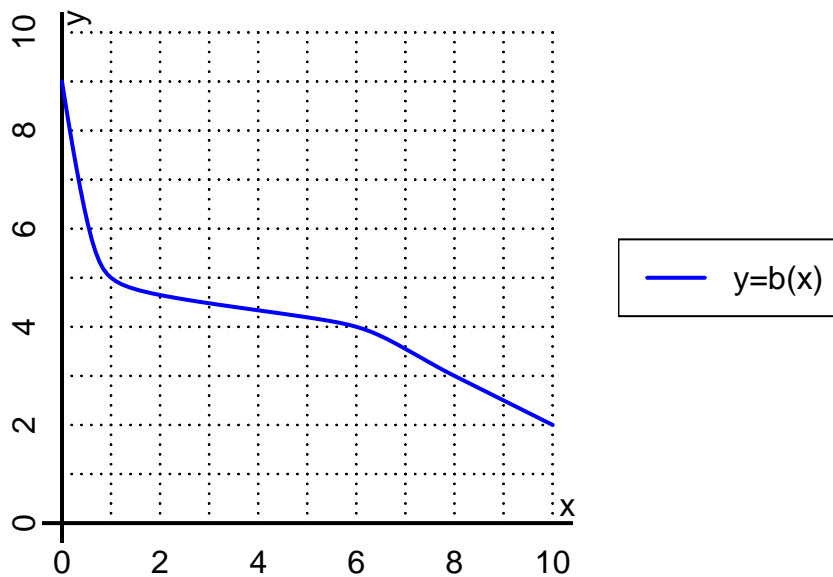
$$f(x) = 3x - 7$$

a. Evaluate $f(24)$.

b. Evaluate $f^{-1}(20)$.

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10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(1)$.

b. Evaluate $b^{-1}(4)$.

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11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	4			
-1	8			
0	0			
1	-8			
2	4			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?